

JPRS 75734

20 May 1980

Japan Report

No. 98

FBIS

FOREIGN BROADCAST INFORMATION SERVICE

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POLITICAL AND SOCIOLOGICAL

'KYODO' SUMS UP PARTY CHANCES IN COMING UPPER HOUSE ELECTION

OW041025 Tokyo KYODO in English 0949 GMT 4 May 80

[Text] Tokyo May 4 KYODO--Pre-election campaigning for the triennial House of Councillors election is expected to be further accelerated this week amid keen confrontation between the ruling Liberal-Democratic Party (LDP) and opposition forces, with the official announcement of the election on June 6 only 30 days off.

The ruling party is endorsing 23 candidates for the national constituency and 54 for local constituency, and is giving help to one nonparty candidate in the national constituency and two in local constituencies.

At the election, 50 seats in the national constituency and 76 seats in the local constituencies are at stake. The LDP platform has emphasized national security and defense, but it will face difficulties in coping with public expectations on many pending issues like commodity prices increases, the issue of political corruption, and securing supply of various natural resources from abroad.

On the other hand, the Japan Socialist Party (JSP) has officially approved 10 candidates in the national constituency and 35 in local constituencies, and is also supporting six other candidates.

Komeito has put up nine candidates in the national constituency, five in local constituencies and is supporting seven other candidates in those constituencies, while the Japan Communist Party (JCP) is supporting six candidates in the national constituency, 46 in local constituency, and backing one extra candidate.

The Democratic-Socialist Party (DSP) has four in national constituency and seven in local constituencies and is backing three nonparty men.

The New Liberal Club (NLC) is now backing two candidates running in local constituencies, while the United Social Democratic Party (USDF) is supporting one candidate in the national constituency.

The JSP, DSP and Komeito will emphasize their concept of coalition government and introduce such issues as prices, the Lockheed and Kokusai Den Shin Denwa (KDD) Company scandals, and alleged gambling losses at Las Vegas by Koichi Hamada, who recently resigned from the House of Representative membership.

The heads of JSP, Komeito, DSP will meet on May 14 to discuss in detail coordination of their opinions on cooperation in the coming House of Councillors elections.

The opposition forces are looking forward to the chance to obtain a majority in the 252-member House of Councillors, by surpassing the LDP in the coming election. The ruling party suffered serious setback in the last House of Representative election although it could just maintain its majority in the 511 member Lower House. Therefore, there is no knowing which side will win in the coming election, especially with the deterioration in the international situation, symbolized by the Iranian hostage and Afghanistan crises.

Negotiations on a joint election campaign among the three opposition parties made relatively smooth progress as the trio agreed to support a joint candidate each in three one-member local constituencies in Iwate, Yamagata and Kochi prefectures.

The middle-of-the-road Komeito and Democratic Socialist Party (DSP) have agreed to back their joint candidate each in local precinct in Hokkaido and Hiroshima prefectures. It is also expected the three parties will agree on cooperation in Tokushima, another one member election district, and Shiga prefecture.

Prime Minister Masayoshi Ohira who is president of the ruling LDP, will begin his stumping tour throughout the country after returning home from his official tour of the North American continent this week. The LDP has announced its election platform in the last month, and it will also disclose its code of others sometime this month to show to the electorate its determination to tighten the discipline of party members.

CSO: 4120

POLITICAL AND SOCIOLOGICAL

BRIEFS

SAINT VINCENT DIPLOMATIC TIES--Tokyo 16 Apr--Japan has established diplomatic relations with Saint Vincent and the Grenadines, the Foreign Ministry announced Wednesday. Notes to this effect were exchanged Tuesday in London by Japanese ambassador to Britain Naraichi Fujiyama and Dr Claudius C. Thomas, high commissioner of Saint Vincent and the Grenadines to the United Kingdom. The two governments expressed mutual recognition of the desirability to foster trade and friendly relations between them. Saint Vincent and the Grenadines became independent on 27 October last year, and Japan recognized it on the same day. [OW171405 Tokyo KYODO in English 0546 GMT 16 Apr 80 OW]

STRICTER BRIBERY PENALTIES--Tokyo April 13 KYODO--The House of Councillors Wednesday unanimously approved a criminal code revision that extends the terms of imprisonment with hard labor for public officials taking bribes. Under the revised law, expected to come into force within a few days, the term of imprisonment at forced labor for not more than three years is increased to five years for a public officer accepting a bribe. The penalty of five years is extended to seven years for a public officer who solicits and receives a bribe. Revision of the punishments for public officials' bribery came to the fore in 1976 when the Lockheed payoff scandal surfaced. A revision bill was first presented to the Diet in 1977, but had been shelved until now. [Text] [OW230417 Tokyo KYODO in English 0318 GMT 23 Apr 80]

CSO: 4120

MILITARY

JDA CONSIDERS COMPLETING FIVE-YEAR MTDP IN FOUR YEARS

Tokyo JPE AVIATION REPORT-WEEKLY in English 16 Apr 80 pp 6-8

[Text]

The Japanese Defense Agency (JDA) has begun to review its FY 1980-84 Medium-Term Defense Program (MTDP) so that it can be completed in four years or by FY 1983. This is because the JDA understands the United States' strong demand for Japan's increased defense efforts it wants to see implementation of the five-year program over four years.

The agency, planning to end the review by the end of May, intends to increase the defense spending ratio to Japan's gross national product (GNP) to one percent from the current 0.9 percent by FY 1983 instead of FY 1984 as stipulated in the MTDP. For that purpose, it has adopted a basic policy of requesting the Ministry of Finance (MOF) to boost defense expenditures in FY 1981 (April 1981-March 1982) by a nominal 15 percent at least in a draft of the FY 1981 budget. The 13 percent nominal increase, compared with 6.5 percent in FY 1980, translates into 4 to 5 percent real growth. If this is achieved, defense spending ratio to GNP in FY 1981 will become 0.92 to 0.93 percent with a nominal GNP growth estimated at 11.4 percent for the year.

Under this policy, the JDA's budget request for FY 1981 will include such priority items as about 10 warships totaling 20,000 tons, six C-130 transports and an additional four E-2C airborne early warning aircraft. The 20,000-ton ship-building plan, involving missile-armed destroyers and submarines, will be the biggest in the JDA's history, and compares with 16,000 tons in FY 1979. The C-130 transports, priced at about ¥3,000 million each, will be purchased from the United States to supplement C-1s and also be used for mine laying missions. A substantial increase is also planned for Japan's share in expenses needed to maintain American

troops stationed in this country. However, the JDA will give up any additional procurement of F-15 fighters and P-3C antisubmarine patrol aircraft since the FY 1980 budget covers the second-stage purchase of them.

In order to achieve this, the JDA will press the MOF in the immediate future to exempt defense spending from a ceiling for growth for FY 1981, which will be presented to each government agency at the end of July. However, strong opposition is expected from the MOF. The FY 1981 defense spending increase will eventually be subject to the political decision of Prime Minister Masayoshi Ohira.

In reviewing the MTDP, the JDA plans to revise annual buildup plans so that all items of the five-year program can be implemented in four years. The MTDP calls for a total of ¥2,700,000 million to ¥2,800,000 million or an annual average of about ¥550,000 million as expenditures for purchase of military vehicles, weapons, aircraft and ships. If it is completed in four years, the annual average would increase to nearly ¥700,000 million, compared with about ¥460,000 million in FY 1980 as the first year for the MTDP.

Welcoming this is the domestic defense industry whose expectations are growing on a substantial increase in defense procurement. The expanded annual defense equipment expenditures would certainly have a great impact on the industry. However, the Federation of Economic Organizations (Keidanren) and the Japan Ordnance Association show a prudent reaction. This is because the MOF estimates four-year implementation of the MTDP will be impossible. In order to boost defense spending's ratio to GNP to one percent by FY 1983, the expenditures will have to be increased by a nominal 15.4 percent yearly from FY 1981, the ministry says, warning such a large increase would exert great pressure on other government expenditures. The Japan Ordnance Association speculates any increased defense spending would not necessarily lead to a rise in domestic defense equipment orders. It explains an increase in defense expenditures may be used for purchases from the United States as the current argument for increased defense spending has resulted mainly from a strong request from that country.

CSO: 4120

MILITARY

CONTRACTS FOR MAJOR FY 1979 EQUIPMENT AWARDED

Tokyo JPE AVIATION REPORT-WEEKLY in English 16 Apr 80 pp 8-10

[Footnote]

The Central Procurement Office of the Japanese Defense Agency awarded March 31 contracts on major military equipment authorized under the 1979 defense appropriations. Details follow:

Unit = ¥1 million

<u>ITEM</u>	<u>NUMBER</u>	<u>AMOUNT</u>	<u>CONTRACTOR</u>	<u>DATE OF DELIVERY</u>
*GSDF aircraft				
V-107A	1	634.5	KHI	Dec. 25, '80
HU-1H	3	840	FHI	Nov. 25, '80

(Note: Contracts for FY 1979 funded 12 OH-6Ds and three LR-1s were awarded to KHI and MHI in September for ¥1,125 million and ¥791.7 million respectively.)

*MSDF aircraft

KM-2	3	272.25	FHI	Feb. 28, '81
US-1A	1	3,400	Shin Meiwa	Mar. 25, '82

<u>ITEM</u>	<u>NUMBER</u>	<u>AMOUNT</u>	<u>CONTRACTOR</u>	<u>DATE OF DELIVERY</u>
S-61A	2	2,000	MHI	Jul. 28, '82
HSS-2B	8	10,200	MHI	Mar. 31, '82
*ASDF aircraft				
C-1	1	3,837	KHI	Oct. 30, '81
T-3	12	1,373.2	FHI	Aug. 25, '81
T-2	11	10,395	MHI	Mar. 31, '82
V-107A	2	1,574.4	KHI	Mar. 20, '81
MU-2A	1	358.6	MHI	Mar. 31, '81
F-1	5	5,449	MHI	Aug. 31, '82
*Aero-engines				
T-64-10J for US-1A	4	649.4	IHI	Oct. 30, '81
BLC for US-1A	1	91.2	"	"
T58-10M2 for HSS-2B	16	1,048.8	"	"
Same for S-61A	4	262.2	"	Aug. 31, '81
TF40-IHI-801A for F-1	10	2,960	"	Mar. 31, '82
Same for T-2	22	6,366.8	IHI	Oct. 31, '81
JT8D-M9 for C-1	2	570	MHI	Jun. 31, '81
CT58-IHI-140-1 for V-107	4	268.4	IHI	Oct. 30, '80
F100-IHI-100 for F-15	6	4,455.8	"	Mar. 31, '82

<u>ITEM</u>	<u>NUMBER</u>	<u>AMOUNT</u>	<u>CONTRACTOR</u>	<u>DATE OF DELIVERY</u>
*MSDF ships and marine engines				
2,900-ton DD	1	11,743	MHI	Mar. '84
"	1	11,750	IHI	Feb. '84
"	1	11,757	Mitsui S&E	"
TM3B/RM1C powerplants for DDs	3	11,400	KHI	Mar. '83
1,400-ton DE	1	7,000	Sumitomo S&M	"
6DRV engine for same	1	454	MHI	Nov. '81
TM3B for same	1	1,150	KHI	"
2,200-ton SSS	1	14,550	KHI	Mar. '83
Main generator for same	1	810	KHI	Jun. '81
Main electric motor for same	1	760	Toshiba	"
Main electric cell system for same	1	1,488	Yusasa	"
500-ton LSU	2	2,350	Sasebo HI	Mar. '81
Diesel engines for same	2	292	Fuji Diesel	Aug. '80
1,100-ton AGS	1	3,300	Hitachi S&E	Mar. '82
Diesel engine for same	1	142	Fuji Diesel	Jun. '81
11,000-ton AGB	1	14,310	Nippon Kokan	Nov. '82
Diesel engine for same	1	1,720	Mitsui S&E	Sep. '81
Electric propulsion system for same	1	5,500	Fuji Denki	Oct. '81
440-ton MSC	2	334	MHI	Nov. '81
Main engines & power units for same	2	926	MHI	Mar. '81

MILITARY

ASDF TO INTRODUCE ASIP FOR F-4EJ

Tokyo JPE AVIATION REPORT-WEEKLY in English 23 Apr 80 p 7

[Text]

The ASDF plans to send three specialists to the US in late April for study on the aircraft structural integrity program (ASIP) of the USAF, as a preliminary step to improve flight safety and also to extend service life of the ASDF F-4EJ fighter.

ASIP, developed by the USAF, is a program to determine and control degrees of fatigue on the Phantom fighter on a plane-by-plane basis, thus ensuring flight safety throughout the service life of individual aircraft.

Based on the results of the survey, the ASDF plans to adopt the program in FY 1981. During FYs 1981-82, the ASDF will import hardware and software for ASIP. In FY 1983, the ASDF will finalize an ASIP suitable to its F-4s. The program will be launched in FY 1984, sources observe.

Planned introduction of the ASIP by the ASDF is significant in the light of an ASDF plan to upgrade performance of the F-4EJ through installation of a new radar unit and other modification for extended frontline service.

CSO: 4120

MILITARY

JDA TO SET UP CENTRAL HEADQUARTERS IN FY '82

Tokyo JPE AVIATION REPORT-WEEKLY in English 23 Apr 80 pp 6, 7

[Text]

The Japanese Defense Agency (JDA) plans to establish a central headquarters in FY 1982 (April 1982-March 1983) for a unified command of the Ground, Maritime and Air Self-Defense Forces (SDF).

It has turned a central headquarters research office into a preparatory office for construction of a two-story building for housing the headquarters. The building, having three underground floors, will be located at the JDA in Roppongi, Tokyo. Funds of ¥6,000 million for the work will be incorporated into the JDA's budget request for FY 1981.

The central headquarters will have SDF and commercial telephones, facsimile terminals, BADGE air defense system, SF MSDF fleet command and support system and other communications systems. It will also be able to coordinate operations with American forces in Japan.

The plan for the central headquarters surfaced in 1977 after a Soviet MIG-25 fighter landed, without being detected, in September 1976, which caused confusion in the SDF because of divided command systems.

A guideline for Japan-US defense cooperation, drafted in November 1978, emphasized the necessity of the central headquarters. Responding to this, the Medium-Term Defense Program for FY 1980-84 called for establishment of the headquarters to improve the SDF's command communications.

CSO: 4120

MILITARY

P-3C PRODUCTION PROGRAM--LICENSEE LINE-UP

Tokyo JPE AVIATION REPORT-WEEKLY in English 23 Apr 80 pp 7-9

[Text]

Use of more locally-produced electronic equipment for the MSDF/Lockheed P-3C antisubmarine patrol aircraft is scheduled beginning with the ten aircraft in the second contract to be concluded in FY 1980. For the eight Orions in the first contract concluded in FY 1978, six items were placed under license production along with 10 Japanese designed items. For the second contract and beyond another 20 items are scheduled for license production. The JDA will finalize selection of local manufacturers by the end of April.

An anticipated list of P-3C avionics licensees follows:

<u>Item</u>	<u>Anticipated licensee</u>
AQA-7 DIFAR system	NEC
ASQ-81 MAD system	MELCO
ARN-99 Omega navigation system	Furuno Electric
ARN-118 TACAN	NEC
APX-76 SIF Interrogator	Toyo Comm. Equipment
APX-72 IFF Transponder	"
APN-194 radar altimeter	Japan Aviation Electronics Industry
APS-115 search radar	Toshiba
ARN-32 marker beacon	MELCO
R-1651 on-top indicator receiver	Japan Radio
LTN-72 inertial navigation system	Toshiba

<u>Item</u>	<u>Anticipated licensee</u>
ARC-161 HF communication set	Kokusai Electric
ARC-143 UHF communication set	MELCO
ID-1872 ambient sea noise meter	Oki Electric Industry
ARN-83 HF direction finder	MELCO
ASA-64 sub anomaly group	Shimadzu Seisakusho
SHQ-308 thermograph recorder	Oki Electric Industry
AWG-19 HACLS	MHI
Bomb rack, etc.	Shin Chuokogyo
APN-187 doppler radar	Mitsubishi Precision
ACQ-5 data terminal set	Hitachi
HWC-106 nav/comm system	NEC
AIC-22 intercommunication system	Nagano Japan Radio
AGC-6 teletype printer set	Oki Electric Industry

The six Japanese licensees already selected for the first contract are:

<u>Item</u>	<u>Licensees</u>
AYA-8B 1 pic unit	Toshiba
ASA-70 tactical data display	Fujitsu
ASA-66 "	NEC
CY/2461A synchronous converter	Shimadzu Seisakusho
ASA-76 sonobuoy control set	NEC
ARR-72 sonobuoy receiver group	Japan Radio

Japanese-designed electronic equipment and their manufacturers follow:

<u>Item</u>	<u>Manufacturers</u>
MAD compensator	Shimadzu Seisakusho
TAS	"
Altitude warning system	Nagano Japan Radio
UHF/ADF	MELCO
Tactical communications system	NEC
Signal converter	Koden Seisakusho
HF comm. system	Kokusai Electric
Data link cryptography set	Koden Seisakusho
HF comm. system	NEC
Rescue radio set	Taiyo Musen

(Data based on Boei Tokushin, Mar. 27, '80.)

CSO: 4120

MILITARY

TR&DI SELECTS MANUFACTURERS ON NEW SAM COMPONENTS

Tokyo JPE AVIATION REPORT-WEEKLY in English 23 Apr 80 p 10

[Text]

The Technical Research & Development Institute (TR&DI), JDA, has selected manufacturers of components for development of a new shoulder-launched surface-to-air missile.

Scheduled for system integration in FY 1981, the guidance/control unit will be developed by the KHI/NEC group and Toshiba for competitive evaluation. Nissan Motor will develop the launcher and the rocket. Toshiba will develop equipment for testing the new SAM.

Development of the new SAM began in FY 1979 by the TR&DI under a two-year program. It is intended to develop a portable SAM comparable with the US Army's Stinger, for service with the Self-Defense Forces. An outstanding feature of the Japanese shoulder-launched SAM is the use of an image homing system instead of an infrared system. One advantage of the former is that it can carry out a head-on attack against targets. The TR&DI asked NEC to develop the image homing device, while requesting Toshiba to develop an infrared homing device as an alternate system.

It is expected that KHI, which will be responsible for the projectile, will be selected prime contractor.

CSO: 4120

MILITARY

BRIEFS

MELCO WINS SEA SPARROW CONTRACT--The CPO has awarded Mitsubishi Electric Corp. (MELCO) a 4,396 million yen contract for Sea Sparrow antiair missile and target direction systems which will be installed aboard the three 2,900-ton DD type destroyers funded in FY 1979. The missile and related systems will be delivered by March 19, 1984. The new DD will be equipped with Harpoon missiles, OTO Melara's 76mm naval guns, CIWS and a Sikorsky HSS-2B anti-submarine helicopter as well as Sea Sparrow ship-to-air missile system. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English 23 Apr 80 p 9]

CSO: 4120

ECONOMIC

MITI RELEASES WHITE PAPER ON SMALL ENTERPRISES

OW220201 Tokyo KYODO in English 0132 GMT 22 Apr 80

[Text] Tokyo April 22 KYODO--Smaller enterprises are expected to play an increasingly important role in the 1980s for maintenance of the nation's economic and social vitality and for promoting the materialization of the Japan-type welfare society, the Ministry of International Trade and Industry said Tuesday in its annual white paper on smaller enterprises.

The white paper said the gap in wages and productivity between smaller and big enterprises was being eliminated gradually.

It said the smaller enterprises in the past had exerted efforts for expansion of their sphere of existence to cope with the shift to a stable growth era, progress made in internationalization and changes in the environment, such as the worsening of the energy situation.

Since the environment is expected to become increasingly severe in the 1980s, the white paper said the smaller enterprises should make efforts for setting up a structure for international division of labor, such as actively engaging in investments overseas.

It expected competition between smaller enterprises and between smaller and major enterprises to become intensified in the 1980s.

For this sake, it said the smaller enterprises must make further efforts to cope with the new situation.

It said the smaller enterprises were continuing to suffer from a (?labor shortage), and the number of aged workers and part-timers was [word indistinct].

The white paper said it is necessary for the smaller enterprises to actively work for improvement of (?the) working conditions, such as adopting the five-day workweek system and shortening working hours, while coping with the aging trend of workers.

Commenting on the recent trends of the smaller enterprises, the white paper said production of such enterprises in the manufacturing industry at the beginning of fiscal 1979 topped the level recorded prior to the recession.

Output has been expanding smoothly since then, it said.

But a number of unfavorable factors have appeared, such as the sharp rise in material prices and the five successive increases in the Bank of Japan's official discount rate.

In view of this, it said the number of cases of bankruptcies has been showing a trend of increasing since the autumn of last year.

CSO: 4120

ECONOMIC

MITI CONFIRMS EXPERTS TO VISIT CANADA IN JUNE

OW070345 Tokyo KYODO in English 0322 GMT 7 May 80

[Text] Tokyo, 7 May KYODO--The Ministry of International Trade and Industry (MITI) disclosed Wednesday a plan to send a team of experts to Canada next month to study the possibility of adopting the Canadian-developed Candu nuclear power reactor. MITI said it would immediately begin consultations with the Science and Technology Agency on the issue.

MITI revealed the plan upon hearing reports from Vancouver quoting Japanese Prime Minister Masayoshi Ohira as telling his Canadian counterpart Pierre Trudeau that he would have government experts study the feasibility of introducing the Candu reactor.

The MITI move is expected to add fuel to a controversy between it and the Japan Atomic Energy Commission (AEC) over the advisability of Japan introducing the Candu reactor, government sources said.

The AEC ruled against the introduction of the heavy-water type reactor last August, stressing the need to develop Japan's own advanced thermal converter reactor (ATRL). MITI has been advocating introduction of the Canadian-developed reactor for many years in the belief it will reduce Japan's dependence on U.S.-enriched uranium and provide a practical stopgap until the present light water type reactors are replaced by fast breeder reactors. The ministry allocated yen 700 million in the fiscal 1980 budget for studying problem related with the Candu reactor.

CSO: 4120

ECONOMIC

MINISTRY ISSUES WHITE PAPER ON FISHERIES

OW180218 Tokyo KYODO in English 0123 GMT 18 Apr 80 OW

[Text] Tokyo, 18 Apr (KYODO)--The need to further promote "fish culture" operations, such as artificial breeding of salmon, and improve fishing grounds in Japan's coastal waters to cope with the full advent of the 200-mile fishing zone era were stressed by the Ministry of Agriculture, Forestry and Fisheries in its annual white paper on fisheries announced Friday.

It also said the future task faced by the fishery industry was to engage in operations with emphasis laid on conserving on fuel in view of the serious energy crisis and sharp rise in fuel prices.

The white paper, reported to the regular cabinet meeting by Kabun Muto, minister of agriculture, forestry and fisheries, stressed the need for making imports in an orderly manner.

It cited the case involving the bankruptcy early this year of Hokusho Co., a marine product wholesaler, which cornered the imported herring roe (kazunoko) market on expectations of huge profits last yearend. Kazunoko is a popular New Year delicacy but consumers refrained from making purchases last year due to the high prices.

The white paper said the world's fish hauls in calendar 1978 totaled 72,380,000 tons, up 1.6 per cent over the previous year.

But catches of countries engaged in pelagic operations were tending to decline due to the increase in the number of nations establishing exclusive 200-mile fishing zones, it said.

The white paper said that as of last January, 84 countries in the world had established such zones.

Of countries having deep connections with Japan's fishing operations, only China and South Korea remain to establish the 200-mile zones, it said.

The white paper also said:

--The nation's catch volume in 1978 rose only slightly over the previous year to 10,830,000 tons. Hauls from pelagic fishing operations declined 20 per cent to 2,120,000 tons due to poor results in waters around the Soviet Union. Catches of mackerels in the coastal waters increased, however.

--The catch volume in 1979 was believed to have reached the same level as in 1978 or slightly less.

--The increasing trend among coastal countries to establish exclusive 200-mile fishery zones has deprived Japan of most of its traditional fishing grounds and is making fishery negotiations with such countries more and more difficult.

--Trade in marine products is showing a tendency of increasing on a global level. Imports by advanced countries are rising, in particular.

--Japan's imports also have continued to increase, reaching 1,020,000 tons in 1978, or yen 676.5 billion in value. The import value in 1979 topped yen 900 billion. Japan thus replaced the U.S. as the world's top importer of marine products.

--Due to favorable catches of sardine, mackerel and Pacific saury, their domestic producer prices dropped 14 per cent over 1977. The downward trend, however, stopped in 1979 and prices are generally moving higher.

--Consumer prices of fresh fish generally remained at the same level as the previous year in 1978. Prices of such fish as tuna and flatfish started moving upward in April last year. Prices of dried and salted fish rose in 1978 but stabilized in 1979.

--There were 207,000 fishing enterprises in 1978, down 9,600 from 1973. The declining trend has slowed down, however, when compared with the five-year period prior to 1973.

--The number of fishermen totaled 478,000 in 1978, a 6 per cent decline from 1973. An aging process is seen with the number of middle and advanced age fishermen increasing.

--The price of fuel oil used by fishing boats showed a trend of declining up to the end of 1978 but started to turn upward after the revolution in Iran. It rose 2.2 times in February this year compared with a year ago.

--With the rise in the income level of the people, there has been an increase in the number of people utilizing fishing villages for recreation purposes, offering fishermen additional sources of income through engaging in lodging and angling businesses.

ECONOMIC

MITI DRAFTS BASIC POLICY ON AIRCRAFT INDUSTRY

Tokyo JPE AVIATION REPORT-WEEKLY in English 16 Apr 80 pp 2-3

[Text]

The Ministry of International Trade and Industry (MITI) has drafted a three-pillar basic policy on Japan's aircraft industry in anticipation of its further internationalization. The policy calls for promotion of international cooperation, the private sector's increased financial outlay in aircraft development, and maintenance of free trade rules.

MITI Minister Yoshitake Sasaki recently briefed Japanese aircraft industry leaders on the basic policy. However, they have expressed dissatisfaction especially with the private sector's increased financial responsibility, indicating it will be a long time before the industry accepts the three principles.

MITI's proposal for the basic policy came prior to Japan's parliamentary approval of the civil aircraft trade agreement, signed under the Tokyo round of multilateral trade negotiations sponsored by the General Agreement on Tariffs and Trade (GATT) just before the Tokyo summit of seven industrial democracies late last June. It is designed to cope with international friction over aircraft trade at a time when international competition for civil aircraft sales is growing with the Airbus Industrie A300 and the A310 penetrating the American market. The agreement calls for removal of tariffs and non-tariff barriers in aircraft trade and restrictions on government subsidies for aircraft industries in order to develop a healthy international aircraft market. Japan's ratification of this agreement will pave the way for the Japanese aircraft industry's internationalization. On this occasion, MITI intends to establish basic policy as a guideline for development of the industry.

The first principle of international cooperation promotion means activating such moves as the Japan-US-Italy joint Boeing 767 development and the Japan-Britain RJ500 aero engine collaboration. Although some quarters have insisted on Japan's independent aircraft development, MITI has given priority to international cooperation which can reduce financial risks in aircraft development and secure larger aircraft markets.

Under the principle of maintaining free trade rules, Japan as a signatory to the aircraft trade agreement will take actions for promoting free trade in aircraft. In this respect, MITI acknowledges misunderstanding of Japan's aircraft industry policy in the United States. At US Congressional hearings in March, United Auto Workers Union (UAW) President Douglas Fraser, while criticizing Japanese automakers, charged Japan has demanded that 767 parts equal to 15 percent of its 767 purchase value be produced in the country. This is a wrong interpretation of the 767 project. MITI pointed out production shares under the Japan-US-Italy 767 project have not been fixed according to each nation's 767 purchases, terming Fraser's charge unreasonable. In a bid to forestall any spread of such misunderstanding, MITI has outlined the principle anew to impress foreigners with Japan's free trade policy.

As for the private sector's increased financial burden, MITI thinks that the Japanese aircraft industry should depend on its own resources rather than the government.

CSO: 4120

ECONOMIC

BOEING CHIEF VOICES INTEREST IN Y-XX PROJECT

Tokyo JPE AVIATION REPORT-WEEKLY in English 16 Apr 80 pp 3-4

[Text]

T. A. Wilson, Chairman of the Boeing Co., expressed interest in the Japanese Y-XX project during his visit with MITI April 1. While talking with Shohei Kurihara, Director of Machinery and Information Industries Bureau, Wilson said that Boeing is ready to pursue studies to develop and produce jointly with the Japanese a new 130-passenger transport. He told Kurihara that his company appreciates its business relations with the Japanese and is ready to study possibilities of further cooperation through such projects as the Y-XX 130-passenger transport project. He also emphasized interest in the RJ500 Anglo-Japanese joint aero engine development program.

According to Wilson, Boeing at present has three major development programs. First is a stretched version of the Boeing 747. Next is stretched version of the 767 and a 130-passenger transport third. For the 130-passenger transport, Wilson revealed that a variant of the 737 or a shortened version of the 757 could be considered.

Before visiting MITI, Wilson called on Kiyoshi Yotsumoto, Chairman of the Civil Transport Development Corporation (CTDC), that is engaged in the Boeing 767 joint development and production program. During the two-hour long talk, Wilson explained to Yotsumoto Boeing's readiness to pursue possibilities for a joint program to develop a 130-passenger transport. He suggested a joint preliminary market survey on this class of new transport, according to sources.

CSO: 4120

ECONOMIC

BOEING 767 DETAIL DESIGN TO BE COMPLETED DURING APRIL

Tokyo JPE AVIATION REPORT-WEEKLY in English 16 Apr 80 pp 4-6

[Text]

All work for detail design on the Boeing 767 transport components assigned to the Japanese will be completed before the end of April, according to Kenji Uchino, Vice Chairman of the Civil Transport Development Corp. (CTDC), who delivered a status report on the Boeing 767 joint development and production program at the CTDC's 26th directors' meeting April 1.

Highlights of Uchino's report follow:

- 1) Work for basic design at Seattle was completed in June 1979 for those components assigned to MHI, KHI, and FHI. Since then work for detail design has been carried out in Japan. This is scheduled for completion before the end of April.
- 2) Reduction of weight has been a major goal in development of the 767. The Japanese companies have succeeded in helping achieve this goal. All the components designed by the Japanese are within specified limits.
- 3) Basic design of the large cargo door, which was added to the Japanese efforts as a standard optional item, was completed at Seattle on March 4. Detail design is now under way in Japan.
- 4) Engineers and specialists stationed at Seattle from member companies of the CTDC total 62 at present. They include seven members of the CTDC Seattle Team, two specialists for market survey and product support, and 53 from companies which received Boeing contracts for 767 components.

and parts other than those contracted for between Boeing and the CTDC,

5) Japanese engineers and specialists dispatched to Seattle have earned a good reputation. Boeing is asking for many of them to stay longer.

6) Japanese companies have almost completed construction of new facilities and installation of machines for the program. Installation of tooling for assembly of large components is also nearing completion. Manufacture of parts began in September 1979 at NIPPI (Japan Aircraft Mfg.) followed by other companies. Sub-assembly work will soon start at MHI and KHI.

7) The 767 production program calls for efforts to reduce weight. For this goal, extensive use of automated processing of sophisticated parts is required. For example, a new processing technology is being developed by FHI for bonding of composite material for the wing fairing. Other companies are similarly required to develop new technology and systems for handling and processing technology for large parts. Further efforts are being encouraged in this respect to achieve cost reduction.

8) Shipment of the Japanese components will begin July 21 with the wing ribs manufactured by KHI. The wing ribs for eight 767s will be shipped during FY 1980.

9) In addition to cost control, procurement of materials through import will become an important issue. Lead time for material from the US is growing due to increased demand for US military aircraft programs. Certain materials may become unavailable to meet the production schedule. It is hope that efforts will be doubled to improve the material supply situation in Japan.

10) In addition to the contracts between Boeing and CTDC, Japanese parts suppliers have directly been given Boeing orders for the 767 program. They include Teijin Seiki, Sumitomo Precision Products, Shimadzu Seisakusho, Kayaba Industry, New Japan Aircraft Maintenance, Koito Manufacturing Co., MELCO and Matsushita Electric.

CSO: 4120

ECONOMIC

KHI, FHI VIE FOR MT-X CONTRACTS

Tokyo JPE AVIATION REPORT-WEEKLY in English 16 Apr 80 p 6

[Text]

While the ASDF is finalizing plans for the MT-X next intermediate trainer for completion by the end of May, Kawasaki and Fuji heavy industry firms have told the Japanese Defense Agency (JDA) of their readiness to respond to calls for contracts for the first Japanese military aircraft program in 15 years. Requirements for the MT-X call for 200 aircraft worth ¥250,000 million, sources say.

Intended to replace the Lockheed T-33A and Fuji T-1A/B trainers, the MT-X is to be designed and built locally and to be powered by a Japanese engine. It is expected that the ASDF will procure 150 to 200 aircraft in ten years from the late '80s. Envisaged performance requirements call for versatility for high-altitude weather observation, liaison flight, and other missions in addition to training. Projected unit cost is estimated at about ¥1,300 million.

KHI has already completed basic design of its KA840 trainer. Measuring 12.4m in length and 10.4m in span, the KA840 has a maximum speed of Mach 0.9 and a range of about 1,400km--which allow the aircraft to fly non-stop from Tokyo to Naha or Iwo-Jima. Its maneuverability is superior to the T-33 and T-1 and it will substantially reduce training time and fuel consumption, says KHI. The company, the producer of T-33As under license, is thus ready to submit its proposals once the JDA finalizes the MT-X program.

FHI, which designed and produced the T-1 trainer, on the other hand, has not revealed its plans yet, "so as not to show our cards to a rival," according to an FHI executive. The company, however, has been investing in a small wind tunnel and other facilities for development of the new trainer. It is expected that FHI will shortly complete basic design of an MT-X candidate aircraft.

ECONOMIC

FY 1980 NAL OPERATIONS PROGRAM ANNOUNCED

Tokyo JPE AVIATION REPORT-WEEKLY in English 23 Apr 80 pp 1-3

[Text]

The National Aerospace Laboratory (NAL) of the Science and Technology Agency has finalized its FY 1980 (April 1980-March 1981) operations program specifying NAL's organization, budget, personnel, research projects and equipment plans in the year.

According to the program, NAL will consist of a management division, seven research divisions, three research groups, one research center and one branch. Its headquarters for promotion of STOL aircraft will be expanded for smooth and effective research into a fan jet STOL aircraft, which is NAL's most important research subject. Personnel will be reduced by three persons from FY 1979 to 478, including 356 researchers.

Its budget for FY 1980 is set at ¥6,048,356,000, up ¥599,287,000 from the previous fiscal year. Funds authorized to be disbursed in following years total ¥6,855,570,000. Other NAL funds in the year are ¥41,805,000 for the Environment Agency, ¥270,826,000 for MITI's big industrial technology R&D projects, and ¥336,571,000 for research and development of energy-saving technology.

As for equipment projects, NAL will build a flight simulator for development of an experimental low-noise STOL aircraft. Other equipment and facilities for NAL projects will be built to upgrade its aerospace technology.

Research projects in the year cover the STOL aircraft; jet transports, air traffic safety and aircraft hazards; aero jet engines; satellite-launching rockets; satellites; expanded utilization of aerospace technology for other areas; and computer application technology. Planned as special research subjects are the fan jet STOL aircraft, liquid oxygen and liquid hydrogen rocket engines, and basic satellite technology. Priority is being given to the fan jet STOL aircraft. NAL will also participate in research and development of aero jet engines under MITI's big industrial R&D projects and also high efficiency gas turbines under its extensive energy-saving technology R&D projects while proceeding with research into techniques for preventing aircraft caused hazards under the Environment Agency.

Details of NAL's major research subjects for FY 1980 follow:

- 1) Fan jet STOL aircraft--research and development of an experimental low-noise STOL aircraft (fabrication of a high lift system, flight system, the C-1 transport's modified parts, function parts, the FJR engine's modified parts and two FJR engines), flight performance, noise level of high lift devices, engine fittings, structures, and flight systems.
- 2) STOL-related research--overall performance of STOL aircraft, aerodynamic features of STOL aircraft, flight performance of such aircraft and flight standards, aerodynamic systems regarding high lift wings, suitable design processes for control systems of V/STOL aircraft, flight stability of aircraft, flight features of all kinds of aircraft, processes for vibration tests, and acoustic fatigue of airframes at high temperature.
- 3) Jet transports, air traffic safety and aircraft caused hazards--transonic wings, unified flight instruments, reduction of jet engine noise, and reduction of nitrogen oxide emissions from jet engines.
- 4) Jet engines--research and development of aero jet engines.
- 5) Satellite-launching rockets--liquid oxygen and liquid hydrogen rocket engine elements, inertial inducement, features of liquid rocket boosters, high-altitude performance of rocket engines, liquid rocket engine systems, longitudinal vibration of rockets, aerodynamic features of satellite-launching rockets, aerodynamic features of small rockets, aerodynamic features of flying objects, and control of rockets.

6) Satellites--basic satellite technology, ionic engine systems, remote sensing by satellites, satellite-recalling techniques, utilization of space shuttles, three-axis control of satellites, overall performance of flying objects, orbit determination, space lubrication, and control of flexible satellites.

7) Utilization of aerospace technology in other areas--high efficiency gas turbines, utilization of wind energy, and dynamic systems for producing extremely high pressure.

8) Computer utilization techniques--thin air currents, transonic computing aerodynamics, software for designing transonic wings, aerodynamic elasticity, fatigue analysis of structures, orbit determination, simulation of inner current, and picture analysis and processing of remote sensing.

CSO: 4120

ECONOMIC

AERO INDUSTRY TO SEEK INCREASED DEFENSE SPENDING

Tokyo JPE AVIATION REPORT-WEEKLY in English 23 Apr 80 pp 3, 4

[Text]

The defense-oriented Japanese aircraft industry will request the government to increase defense equipment spending and take other measures to cope with skyrocketing prices of aircraft materials.

Recent prices of such aircraft materials as aluminum, titanium and various alloys increased 40 to 50 percent over a year ago because aerospace manufacturers in the world have facilitated purchase and stockpiling of strategic materials amid rising tension between the United States and the Soviet Union since the latter's invasion of Afghanistan late last year. Delivery of these materials has lengthened to one to two years from three months. Furthermore, some of them cannot be supplied to Japanese industry.

Afraid that the deteriorating situation may endanger the Japanese Defense Agency's (JDA) aircraft building program, the industry has decided to ask JDA, the Ministry of Finance, the Ministry of International Trade and Industry and other government agencies concerned for assistance in securing a stable supply of the materials.

Most Japanese aircraft manufacturers depend on orders from JDA, although they are about to produce parts and components for Boeing 767s. Main JDA-ordered aircraft for imminent production are P-3C antisubmarine patrol planes and F-15 fighters. They have completed production facilities for these new military aircraft.

The manufacturers will be able to carry out knockdown and license production of these aircraft. However, subsequent full-fledged domestic production will be seriously affected by the shortage of aircraft material. They are also required to fully observe prices and delivery terms under the JDA's budget.

At a time when material prices have shown a year-to-year increase of as much as 50 percent, Japanese manufacturers say, their efforts to absorb material markups on their own have reached their limit.

CSO: 4120

ECONOMIC

FJR710/600 ENGINE TESTS TO BE HELD IN UK

Tokyo JPE AVIATION REPORT-WEEKLY in English 23 Apr 80 p 4

[Text]

Two FJR710/600 aero engines will be tested at the National Gas Turbine Establishment (NGTE) at Farnborough during FY 1980 under the backing of the Engineering Research Association for Aerojet Engines (ERAAE) for Japan's national aero engine development program.

The Japanese experimental engines will be shipped to the UK in early December. They will undergo high-altitude tests during January through February at the British facility. Further tests including anti-icing performance are also planned in the UK in FY 1981. These tests will culminate the 10-year-long national aero engine development project promoted by the Agency of Industrial Science and Technology, MITI. Further national efforts will be switched to the RJ500 Anglo-Japanese joint program.

Under the national project, the FJR710/20 engine was developed during Phase One (FYs 1971-75). It was tested in the UK in FY 1978 and proved satisfactory. The FJR710/600 engine is the first experimental model of Phase Two (FYs 1976-80). Development of the FJR710/700 model was suspended with conclusion of the XJB (RJ500) engine joint development program in December 1979 between Rolls-Royce Limited and three Japanese aero engine manufacturers.

Running time of the FJR710/600 engine will total 1,500 hours in FY 1981, the last year of the program, including 975 hours in FY 1980.

CSO: 4120

ECONOMIC

FIRST XJB PROGRAM STEERING COMMITTEE MEET HELD

Tokyo JPE AVIATION REPORT-WEEKLY in English 23 Apr 80 p 5

[Text]

The Engineering Research Association for Aerojet Engines (ERAAE) held on April 9 its first XJB (RJ500) Program Steering Committee meet and elected Yoshinori Takamura of IHI Chairman.

During the first meeting, the XJB Program Steering Committee decided to organize two subcommittees. One is the XJB Design Development Subcommittee and the other the XJB Operations Subcommittee.

The XJB Design Development Subcommittee is headed by Kiyoto Miyazawa, Deputy Director of Aeroengine & Space Development Div., IHI. The three members are Genji Ito, Director of Technical Development Sec., Aeroengine & Space Development Div., IHI; Tokuhide Tanimura, Director, Second Technical Dept., Jet Engine Sec., Engine Div., KHI; and Yutaka Utakoji, senior staff of Engine Dept., Nagoya Aircraft Works, MHI.

The XJB Operations Subcommittee is headed by Takamura. Members include Junji Matsuoka, Director, Industrial Gasturbine Sales Dept., Jet Engine Sec., Engine Div., KHI; Ichiro Hattori, Director, Aero Engine Sec., Aircraft Equipment Dept., Aircraft & Special Vehicles Div., MHI; and Shunkichi Harada, Director, Development Sec., Aeroengine & Space Development Div., IHI.

CSO: 4120

ECONOMIC

JAPAN-UK AERO ENGINE JOINT VENTURE INAUGURATED

Tokyo JPE AVIATION REPORT-WEEKLY in English 23 Apr 80 pp 5, 6

[Text]

Rolls-Royce Limited and three Japanese aero engine manufacturers, i.e., Ishikawajima-Harima Heavy Industries Co., Ltd. (IHI), Kawasaki Heavy Industries Ltd. (KHI) and Mitsubishi Heavy Industries Ltd. (MHI) have inaugurated a joint venture company named "Rolls-Royce and Japanese Aero Engines Limited" in order to promote joint development of a nine-ton class commercial aero jet engine. Registration of the company was completed on April 3 and it has now started operations, the three Japanese companies jointly announced in Tokyo last week.

Coded in Japan as the "XJB", the Japan - UK engine collaboration program links the technology which the Japanese industry has accumulated through the FJR aero engine development project with the well established experience, technology and marketing capabilities of the British engine company, the announcement said. The FJR is one of the big R&D projects sponsored by the Agency of Industrial Science and Technology, Ministry of International Trade and Industry (MITI).

The XJB (RJ500) is the first commercial turbofan engine development program Japan has ever undertaken. The engine will be designed to power 120 - 150 seat passenger aircraft and will have a maximum take-off thrust of nine tons. It will feature low noise and low air pollution, and have excellent specific fuel consumption rates. The development cost which will total approximately ¥140,000 million will be borne equally by Japan and the United Kingdom. Development of the engine will start in FY 1980 (April 1980 - March 1981) and is scheduled to be completed in eight years, the announcement said.

The joint venture company with initial capital of £2,000 will be located at Derby, England. It will be invested equally by Japan and the UK. Five Japanese and five British members will comprise its board of directors. The first board meeting is scheduled to be held in Derby on April 21. The members of the board of directors tentatively appointed are listed below:

JAPANESE

Osamu Nagano, Adviser, IHI; Kaneichiro Imai, Managing Director, Aeroengine & Space Development Div., IHI; Hiroharu Tsukamoto, Managing Director, Engine Div., KHI; Kenji Ikeda, Managing Director, Aircraft and Special Vehicles Div., MHI; and Kozo Hirata, Managing Director, Society of Japanese Aerospace Companies.

U.K.

A.R.G. Raeburn, Vice Chairman; R.H. Robins, Commercial Director; A.G. Newton, Engineering Director; P.F. MacFarlane, Group Treasurer; and A.D. Jackson, Director, Business Development, Rolls-Royce Limited.

CSO: 4120

ECONOMIC

BRIEFS

HIGHER INTEREST RATES--Tokyo April 19 KYODO--Interest rates on business loans and consumer loans charged by the nation's 13 major commercial banks increased by 0.55 percentage point during March to hit a three-year high of 7.789 per cent per annum at the end of the month, according to a Bank of Japan report. This was the highest since March 1977 when the lending rates registered 7.902 per cent. The short-term interest rate during the month also advanced 0.747 percentage point to 7.702 per cent. This was the highest since January 1976 when it came to 7.753 per cent. The Central Bank said the interest rate boost was attributed to the official discount rate hikes on February 19 and March 19 resulted in a steep rise in lending rates for major enterprises. Interest rate boosts in loans for smaller firms, which was delayed, will be carried out gradually, it predicted. The lending rates on overall loans rose to 42.5 per cent of the nation's official money rate hikes since last April, which totaled 5.5 per cent, and those on short-term loans, 59.4 per cent. [Text] [OW190219 Tokyo KYODO in English 0122 GMT 19 Apr 80]

GOVERNMENT BONDS--Tokyo April 25 KYODO--The Upper House Friday enacted a bill allowing the government to float a maximum of yen 7,485 billion of deficit-financing bonds for fiscal 1980 ending March 31, 1981. The Liberal-Democratic Party and the New Liberal Club voted for the bill at a plenary session Friday of the House of Councillors. The fiscal 1980 budget, which was already given Diet approval, calls for government spending of yen 42,588.8 billion, including that financed by the bonds. Deficit-financing bonds account for 17.8 percent of the total spending in fiscal 1980, compared with 20.9 percent in the fiscal 1979 budget. Dependence on deficit-covering and construction bonds will decline to 33.5 percent from 39.6 percent in fiscal 1979. [Text] [OW250432 Tokyo KYODO in English 0248 GMT 25 Apr 80]

FINANCE MINISTER ON DOLLAR, IMF--Tokyo April 22 KYODO--Finance Minister Noboru Takeshita said Tuesday he would support the creation of a so-called substitution account in discussions to be held in an interim committee meeting of the International Monetary Fund (IMF) starting Thursday in Hamburg. Takeshita, after the day's cabinet session, told newsmen he would participate in the discussions to show Japan's basic agreement on the account, whose creation is aimed at reducing fluctuations in the value of the U.S. dollar. IMF has been working for years on proposals to create the account to remove the number of U.S. dollars outside the United States and to provide dollar holders with claims denominated in IMF units called special drawing rights (SDR's). Takeshita, who was leaving for Hamburg later Tuesday will have individual meetings with U.S. Treasury Secretary G. William Miller and Hans Matthöfer, finance minister of West Germany. He is also to take part in a meeting of the World Bank. [Text] [OW220444 Tokyo KYODO in English 0420 GMT 22 Apr 80]

CSO: 4120

SCIENCE AND TECHNOLOGY

REVEALING DETAILS ON VLSI PATENTS QUESTIONED

Tokyo COMPUTER DIGEST in Japanese Mar 80 p 84

[Text] According to a story revealed by the VLSI Technical Research Union (Director, Kazuo Iwate), approximately 30 patents held by government related research institutions among the research achievements to date, will be open to the public before the end of January and the patent operation rights will be given to foreign semiconductor makers on a commercial basis.

The technical research union has pursued the development of VLSI, a computer element of the next generation, by investing the total sum of 70 million including the national subsidy since fiscal 1976 as a 4-year plan. This activity for development will be closed by the end of March of this year, which was summarized as "we have achieved satisfactory results as much as we hoped to achieve" (Joint Research Institute Director, Yasuo Tsurumi). Some 600 cases for patent application including those developed by the fellow union member private research institutes such as the Computer Research Institute (Fujitsu Limited, Hitachi, Ltd., Mitsubishi Electric Co., Ltd.) and Nichiden Toshiba Information System (Nippon Electric Company, Limited, Toshiba Corporation) were submitted, and approximately 10 percent of those are the patents belonging to national research institutions.

The arrangement of the union dictates that the patent operation rights of the inventions developed by the private sector are awarded to the respective private organization, standing as a subcontractor, by the VLSI Technical Research Union, and that each maker can offer this right to foreign makers by their own decision. However, proceedings for the patents belonging to the government have not been clarified to date.

On the other hand, exemplified by the Japan-U.S. semiconductor war, it appears that the competition in IC technical development and marketing between Japan and the U.S. will be more intensified in the future. The U.S. semiconductor makers have been strongly pressing our country to make known research achievements by indicating their views that: (1) It hampers fair competition to develop VLSI by the united entity of the government and subsidized industries. (2) It is not fair—but a "technology cartel"—not to disclose the technology developed by the VLSI Technical Research Union to foreign makers.

In response to this, the "go" sign has been already given to the offering of the patents owned by the private sector to foreign makers. However, this time, it has been decided to also open the patents developed by national institutions such as the Electrotechnical Laboratory, and belonging to the country, to domestic and foreign makers. This makes it finally possible, even for foreign industries to use all the achievements developed by the VLSI Technical Research Union by paying a counter value or on a cross license base.

The union translates this as, "Disclosure of patents, in this case, means the opening of the way for foreign makers to be able to use publicized patents, and it does not mean to open all the contents in detail" (Joint Research Institute Director, Tarui), and the MITI also interpretes it as, "This measure will not contribute to the loss of our national interests but, rather it will facilitate beneficial dealings when importing foreign technologies and negotiating with foreign industries."

Reviewing the achievements of VLSI development to date, technologies essential to the production of VLSI, aiming at a pattern width of below 1 micron, are sprouting, for example, beginning with a reflection optical micro-pattern transcriber which utilizes distant ultraviolet rays and a transcriber which utilizes X-rays, and an electronic beam exposer. With the distant ultraviolet rays (ddp UV) having an especially short wavelength, conventional optical lenses are not at all useful, and therefore a completely new optical system which utilizes only mirrors (reflection) has been developed. This invention has drawn world-wide attention. Even with the electronic beam source, remarkable progress is seen by the development of a way to practicalize the boride lantern. These are the achievements claimed by the end of fiscal 1978, and it is forecast that, in March, an outline of the total results will be announced by the technical research union.

Concerning these developmental activities, a small sector within the industries expressed their opinion in that the offering of the previous property developed even by investing people's tax in foreign groups means a national loss even if it is to be conducted on a commercial basis. However, taking into consideration the prospect that in the future it will be difficult to import technologies as easily as has been done to date in light of the fact that the VLSI technology is a strategic technology extending over to the 21st century, the decision made at this time to disclose all patents is expected to be as useful as "chessmen captured and available for use" in acquiring superb foreign technologies.

9940

REF: 4105

SCIENCE AND TECHNOLOGY

ENERGY-SAVING, LOW-POLLUTION ENGINE SELECTED FOR TRIAL USE

Tokyo KYODO in English no time given 10 Apr 80 OW

[Text] Kanazawa, 10 Apr (KYODO)--A new type of energy-saving, low-pollution engine, developed by a Japanese inventor in August 1978, but rejected for use in vehicles, has been selected for trial use by the Japanese National Railways (JNR) and other large utility companies, it was learned Thursday.

The Onishi engine, named after inventor Shigeru Onishi, founder of the Nippon Clean Engine Laboratory Corp., is being produced for JNR, Nippon Telegraph and Telephone Public Corp. and Tokyo Gas Co., the developer said.

Onishi's development company said the engine had been designed to reduce air pollution by motorcycles and small cars, but was judged to be too small and unfit for rapid changes in speed of revolutions.

But the demand for low-polluting, energy-saving engines has brought new attention to the device, especially for use by the national railways and telecommunication industries, who use small engines on construction jobs. The gas company is investigating small engines to power its home heating and cooling systems.

The Onishi engine retains part of its gas exhausts in its cylinder where it mixes with air and vaporized gas. The mixture is burned again, insuring complete combustion, one-thirtieth the CO fumes and 40 per cent better fuel economy, the laboratory said. The engine is also said to be less noisy than conventional engines.

JNR has purchased two units to run small electric power generators for a one-year trial period. The poisonous fumes of conventional engines used to power lights inside tunnels have long been a sore spot for railway workers.

The telecommunications company is planning a similar use of the engines to power lights in underground telephone line projects.

CSO: 4120

SCIENCE AND TECHNOLOGY

FULCRUM OF STRATEGIC PLANT, COLLECT TECHNOLOGY FRAMEWORK

Tokyo JIDOSHA KOGYO SHIMBUN in Japanese 16 Jan 80 p 11

[Article: "Toyota Motor to Construct Second Plant in Tahara"]

[Text] Toyota Motor Company, Ltd. disclosed its plan to install at its second plant under construction in Tahara all the newest facilities which incorporate the framework of technology and its production and management knowhow in order to ready this company for its strategy of the 80s. More specifically, this new plant will enable a nearly 20 percent decrease in energy consumption and cost compared to present plants. In addition, a vertical flow paint shop mode will be employed while every effort will be made to avoid line troubles. In this manner, this company will endeavor to level up to the topmost automobile production technology in the world. It will concentrate all the technology Toyota has accumulated to enable resources and energy conservation and make this plant the most efficient in the world.

This second plant at Tahara is the tenth plant constructed by Toyota Motor, and this plant is being constructed 9 years after the Tsutsumi Plant which was completed in December 1970. The first stage plan involved the funding of 40 billion yen with projected completion by the spring of 1981, and construction was initiated in November 1979. It is expected initially to produce 10,000 of the newest small cars per year [as published] which will be followed by the expenditure of another 40 billion yen to complete the plant by the end of spring of 1982 at which time another 10,000 small automobiles will be produced additionally.

This plant will be the fulcrum of the system that will produce 3.5 million motor vehicles per year for competing in the world wide small car market of the 80s. In this manner Toyota is designating this plant to be its prime force in the strategic efforts against the Western automobile makers headed by the Big 3 of the United States.

Toyota's basic attitude toward this new plant construction can be said to be greater efficiency. It is planning for the people who work in this plant to work as humanly as possible, and the lines will be designed as operating lines for improved production in the idealistic background that has been invoked. More specifically, the aging nature of the workers is being taken

into account to operate these lines through the simplest of manual operations. For example, body heights are adjusted to minimize fatigue on the part of the worker. Furthermore, minor mistakes on the part of the workers will be compensated wherever possible from the material end. At the same time, the production system will be designed so that the operator will be able to see at a glance what parts are in line and how many parts are on line no matter what kind of car is being produced or what kind of parts are on stream. This mode will overcome the weakness of an automated plant where the slightest miss stops the entire operation. At the same time, it is a fulfillment of Toyota's pride, its "billboard mode" [management system].

In the area of energy conservation which will be the top problem in the post 80 era, this new plant will enable a 20 percent reduction in cost of energy compared to the present day plants. At the painting plant which is one of the major energy consumers, the process will be divided into the three areas of 1) booth zone, manual operation zone, and drying chamber zone; 2) the building design will provide facility for maximum utilization of daylight; 3) the volume of the drying chamber will be made small; and 4) the location of the exhaust fan will be adjusted to enable operation at minimum capacity.

2267
CSO: 8129/0747

END

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VIETNAM REPORT

WORLDWIDE SERIAL REPORTS

WORLDWIDE REPORT: Environmental Quality
WORLDWIDE REPORT: Epidemiology
WORLDWIDE REPORT: Law of the Sea
WORLDWIDE REPORT: Nuclear Development and Proliferation
WORLDWIDE REPORT: Telecommunications Policy, Research and Development

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